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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/526,930	03/16/2000	Timothy M. Schmidt	TI-30734	1461

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EXAMINER	
KIM, KEVIN	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/526,930	SCHMIDT ET AL.	
	Examiner	Art Unit	
	Kevin Y Kim	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1-27-2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-11 and 28-36* is/are allowed.

6)☒ Claim(s) *1-4,6,7,12-22,24-27,37,38 and 40-47* is/are rejected.

7)☒ Claim(s) *5,23 and 39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the rejected claims as set forth in the previous Office action have been considered but are moot in view of the new ground(s) of rejection. In light of a newly found prior art showing the claimed invention is anticipated, the previous rejection in view of Winters and Tangemann is hereby withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4,6,7,12-22,24-27,37,38,40-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Rshid-Farrokhi et al (US 6,400,780).

Claim 1.

Rshid-Farrokhi et al discloses a method of communication between a transmitter (101) having a plurality of antennas (105) and at least on receiver (103), comprising

selectively phase shifting data communication signals (IN) produced at the transmitter to generate derived versions of channel communication signals, each derived version of the channel communication signals having its desired data communication signal phase shift, in that weights (W), adjusting amplitude and phase, are applied at multipliers (113)

transmitting from the transmitter, derived versions of the channel communication signal to each antenna within the plurality of antennas (105-1,..., 105-k); and providing a distinct delay (117) associated with each derived version of the channel communication signal and its respective antenna.

Claim 2.

Rshid-Farrokhi et al discloses receiving at the transmitter, data communication uplink signals, i.e., feedback, (FEEDBACK CHANNEL) from each remote receiver in communication with the transmitter and estimating a path profile associated with each received uplink signal. See col.5, lines 45-56.

Claim 3.

Rshid-Farrokhi et al discloses determining a distinct communication signal delay associated with each communication channel with a plurality of communication channels, wherein each communication channel signal delay is derived from data associated with the respective uplink signal. See col.3, lines 47-60.

Claim 4.

Rshid-Farrokhi et al discloses applying weight vectors to a transmit signal, wherein the weight vector includes both phase and amplitude.

Claim 6.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 7.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claim 12.

Rshid-Farrokhi et al discloses a communication system comprising:

a transmitter (101) having a plurality of spaced apart antennas (105-1,...105-k);

signal distributing means (113) for coupling communication signals between the transmitter and the plurality of spaced apart antennas;

delaying means (117) operatively coupled to the antennas and the signal distributing means for providing a distinct delay in each of the communication signals coupled between the transmitter and the plurality of spaced apart antennas; and

channel measuring means (121) operatively coupled to the signal distributing means for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas.

Claim 13.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 14.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claims15,16,17.

Rshid-Farrokhi et al discloses applying weight vectors to a transmit signal, wherein the weight vector includes both phase and amplitude.

Claim 18.

Rshid-Farrokhi et al discloses a data communication system comprising,.

a transmitter (101) having a plurality of spaced apart antennas (105-1,...105-k),

at least one remote receiver (103) in communication with the transmitter;

means (113) for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas, and

means (117) for providing a distinct delay associated with each antenna such that a derived version of a communication signal coupled between the transmitter and the plurality of spaced apart antennas can be demodulated within the at least one remote receiver.

Claim 19.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 20.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claims 21 and 22.

Rshid-Farrokhi et al discloses applying weight vectors to a transmit signal, wherein the weight vector includes both phase and amplitude.

Claim 24.

Rshid-Farrokhi et al discloses a data communication system comprising:

a transmitter (101) having a plurality of spaced apart antennas (105-,..105-k);

means (113) for transmitting from the transmitter, derived versions of a communication signal to each antenna within the plurality of spaced apart antennas, and

means (117) for providing a distinct delay associated with each derived version of the communication signal and its respective antenna within the plurality of spaced apart antennas.

Claims 25, 26 and 27.

Rshid-Farrokhi et al discloses applying weight vectors to a transmit signal, wherein the weight vector includes both phase and amplitude.

Claims 37 and 38.

Rshid-Farrokhi et al discloses a method of communicating data between a transmitter having a plurality of antennas and at least one remote receiver, the method comprising the steps of:

selectively amplitude scaling (W) data communication signals produced at the transmitter to generate derived versions of channel communication signals, each derived version of the channel communication signals having its desired data communication signal amplitude; Note that applying weight vectors to a transmit signal scales the amplitude as well as controls the phase,

transmitting from the transmitter, derived versions of the channel communication signal to each antenna within the plurality of antennas, and

providing a distinct delay (117) associated with each derived version of the channel communication signal and its respective antenna.

Claim 40.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 41.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claim 42.

Rshid-Farrokhi et al discloses a data communication system comprising,

a transmitter (101) having a plurality of spaced apart antennas (105-1,..105,k);

at least one remote receiver (103) in communication with the transmitter;

means (113) for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas, wherein the means for providing a derived version of each communication signal is configured to phase shift a communication signal transmitted from the transmitter to the plurality of spaced apart antennas, note that applying weight vectors to a transmit signal controls the phase; and

means (117) for providing a distinct delay associated with each antenna such that a derived version of a communication signal coupled between the transmitter and the plurality of spaced apart antennas can be demodulated within the at least one remote receiver.

Claim 43.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 44.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Claim 45.

Rshid-Farrokhi et al discloses a data communication system comprising:

a transmitter (101) having a plurality of spaced apart antennas (105-1,..105-k);

at least one remote receiver (103) in communication with the transmitter;

means (113)for providing a derived version of each communication signal transmitted from a transmitter channel to the plurality of spaced apart antennas, wherein the means for providing a derived version of each communication signal is configured to amplitude scale a communication signal transmitted from the transmitter to the plurality of spaced apart antennas, that applying weight vectors to a transmit signal scales the amplitude as well as controls the phase; and

means (117) for providing a distinct delay associated with each antenna such that a derived version of a communication signal coupled between the transmitter and the plurality of spaced apart antennas can be demodulated within the at least one remote receiver.

Claim 46.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a code division multiple access (CDMA) data signal. See col.3, lines 35-47.

Claim 47.

Rshid-Farrokhi et al discloses a channel communication signal transmitted to each antenna are associated with a time division multiple access (TDMA) data signal. See col.3, lines 35-47.

Allowable Subject Matter

4. Claims 5,23 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 8-11,28-36 are allowed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Whinnett (US 5,999,826), Barratt et al (US 6,185,440), Goldburg (6,154,661) teaches that weight vectors applied to a transmit signal involves phase and amplitude.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kevin Kim/